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Indian America - Building Economies through Diversification, Tourism
and Technology

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Wireless technology is as an integral part of the economic development puzzle for all communities and should increasingly become the main foundation for all such efforts going forward. The reason is that the combination of pervasive computing with pervasive wireless access will make wireless communications the dominant and most powerful platform for both narrowband and broadband communications. With this context in mind, my paper will review the FCC Wireless Telecommunications Bureau's mission and describe how it promotes Native American economic development through its management of the United States' spectrum resources.

As a general matter, the Bureau's high level goals can be described in three concrete ways: 1) providing greater consumer benefits from the efficient use of the people's spectrum; 2) helping the United States become a global leader in the deployment and investment of wireless services and technologies; and finally and most importantly; 3) promoting the increased and improved use of wireless services, ranging from cell phones and E911 services to microwave and amateur radio services, as part of our homeland security infrastructure in these volatile times.

Overview of Wireless Bureau's Regulatory Initiatives

Our specific regulatory activities are directed towards achieving these aforementioned goals in a clear and transparent manner as described below:

- 1) **We are developing new regulatory concepts that provided for greater access to spectrum...**Our efforts here follow on the breakthrough notion developed by the FCC's Spectrum Policy Taskforce Report which found that the rationing problem in spectrum is that of access as opposed to the actual quantity of spectrum. In the last year, we have followed on this notion by putting out a series of proceedings that have dealt squarely with this issue including:
 - Secondary Markets Proceeding
 - MDS/ITFS NPRM
 - 4.9 GHz R&O
 - Rural NPRM
 - Advanced Wireless Services Band Plan Order
 - 70/80/90 GHz R&O

The main take away from our efforts is a set of core principles that include *technological neutrality, business plan agnostic regulations, and finally a road map toward full flexibility for licensees to meet the exacting demands of consumers.* This process had bumps on the road but we expect that we will continue to incorporate these concepts as we go forward.

- 2) **We are developing regulatory policies that create incentives for moving tethered applications towards untethered platforms.** Our purpose is to eventually migrate all tethered and untethered applications so they can co-exist on both wireless and wireline infrastructure without the consumer knowing the difference. This notion of seamlessness is based on advances of technology such as frequency agile radios, software defined radios, and software radios. *Our role as the regulator is to make sure that we GET OUT OF THE WAY and allow the creative spirit of our great entrepreneurs to flourish in order to meet the varying demands of consumers.* Specific initiatives that the Bureau has been working on are encouraging full flexibility of available spectrum and using our bully pulpit to encourage investment such as wireless security, VPNs and other attributes that help make valuable applications leap from tethered to untethered platforms.
- 3) **Finally, we are focusing on the embedded capabilities of wireless networks and systems by continuously improving the FCC's Spectrum Manager capabilities.** These capabilities range from the phenomenal power of the FCC's Universal Licensing System (ULS) database and its world class license assignment auction systems. These capabilities also extend the Wireless Bureau's efforts to provide consumers with an additional layer of the LNP and E-911 capabilities that we are requiring of the carriers. These embedded capabilities are the pillars that support our other macro-goals. In the case of the ULS system, it provides a mechanism for knowing who has access to spectrum and when. The auction systems provide a way for efficiently and transparently providing access to spectrum to those that need it. The local portability and E-911 capabilities encourage the seamless transition between wired and wireless and in some cases, such as E-911, end up making wireless the better alternative.

Efforts to Promote Native American Economic Development

The Bureau has also been working on developing rules and regulations to promote commercial wireless services in tribal areas. First and foremost, the Commission's tribal bidding credit program encourages spectrum licensees to develop wireless services in tribal areas by providing them with financial incentives in the form of bidding credits as winners of the FCC's spectrum auctions. Key elements of the Tribal Bidding Credit Program are: 1) **Rules and Timing:** Enhanced auction rules to provide greater incentives for wireless carriers to serve tribal lands – effective October 1, 2000 and applicable beginning with Auction #36 – which began on November 1, 2000; 2) **Credit Amount:** \$300,000 for first 200 square miles of qualifying tribal land an applicant commits to serve; \$1500 for each additional square mile; 3) **Buildout Requirement:** Applicants awarded a tribal lands bidding credit must construct and operate a system capable of serving 75% of the population of each qualifying tribal land for which the credit is awarded within the 3 year buildout requirement; and 4) **Applications:** 10 out of the 15 wireless spectrum auctions have resulted in 34 bidders expressing intent to seek a Tribal Land Bidding Credit.

Additionally, the FCC's Designated Entity ("DE") program which is administered by the Bureau provides small businesses, like as those operated by many Native Americans, which meet threshold qualifications to receive bidding credits ranging from 5-35% from the auction bids. The FCC also recently put in place its Secondary Markets rules permitting licensees to lease, either on a short or long term basis, their spectrum in order have spectrum be used for its highest value and to create value for all licensees that have underutilized spectrum. We believe that these rules will provide Native American wireless operators the opportunity to create value for their shareholders while also possibly reducing their operating and capital costs by sharing spectrum infrastructure.

The Bureau is also currently considering a large scale revamping and rethinking of the Commission's rules regarding wireless services in rural areas. The Rural NPRM proceeding initiated last September as part of the RUS/FCC partnership for Rural America is designed to solicit new ideas on how to expand wireless services for the benefit of rural consumers. There are a wide range of issues being examined ranging from different power levels for rural wireless operations to new ideas for infrastructure sharing. Other efforts include ways we can synchronize the FCC definition of licensed wireless services so that rural operators and consumers can take advantage of the financial support mechanisms available from the Department of Agriculture Rural Utilities Services.

Public Safety and Homeland Security Issues

The Bureau has also been working to integrate the use of wireless in public safety and homeland security issues. All of the personal and institutional benefits resulting from our myriad of efforts in promoting wireless public safety programs are applicable to Native American consumers and their communities. Specifically, we have been diligently pushing for E911 compliance by wireless carriers leading to increased deployment of Phase 1 and Phase 2 technologies. These efforts benefit consumers directly by enhancing personal and "public" safety because they provide varying degrees of granular location information for 911 emergency calls made from cell phones. Additionally, the underlying E911 technology also allows new services based on location technology to be introduced thereby potentially creating entrepreneurial opportunities both at the local and national level. Finally, the Bureau is also actively working on public safety licensing schemes that promote greater interoperability and (therefore) greater funding of public safety operations. Our efforts in this area have been to help develop a national public safety plan for the 700 MHz band, an innovative public/private licensing mechanism for the 4.9 GHz public safety band; and working very hard to resolve, both for the short and long term, the pervasive interference issues found in the 800 MHz spectrum band.

Conclusion

In conclusion, wireless technology is a "leapfrog" technology that helps communities to enter into the information age by helping them easily transmit information across wide geographies with the least amount of cost and capital expenditure. It is also one of the few communications technologies that can be built out according to population densities, thereby leading to much more viable and economically efficient outcomes for both consumers and service providers. Whatever the operational context---consumer or business services, public safety or commercial communications---the ability to efficiently and cost-effectively transmit information across geographies using wireless technologies will lead to

powerful benefits in all our communities. Better understanding will lead to better planning and coordination. Better understanding will lead to smarter communities, societies, people and countries. Thus, wireless technologies, and the Wireless Bureau's effort to promote them, are critical parts of a forward looking economic development program for any community.